

Impacts of GHG targets

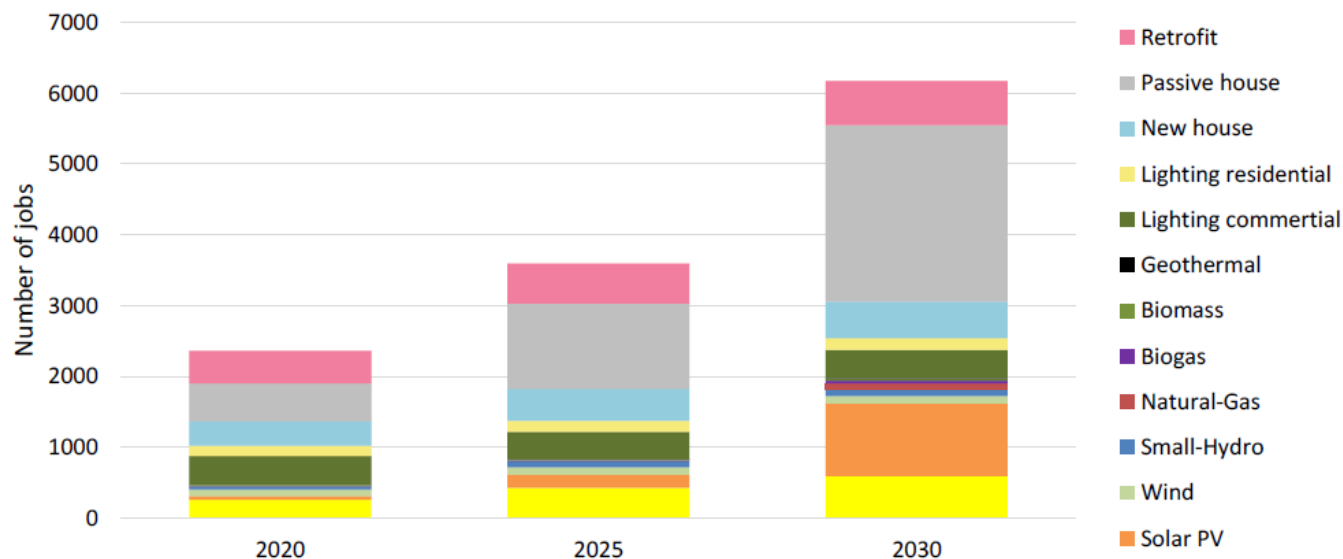
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- Socioeconomic
 - Are jobs lost, created?
 - Effects on GDP?
 - Technological/industrial development
- Distributional
- Environmental

Socioeconomic impacts of INDC implementation in Macedonia

2

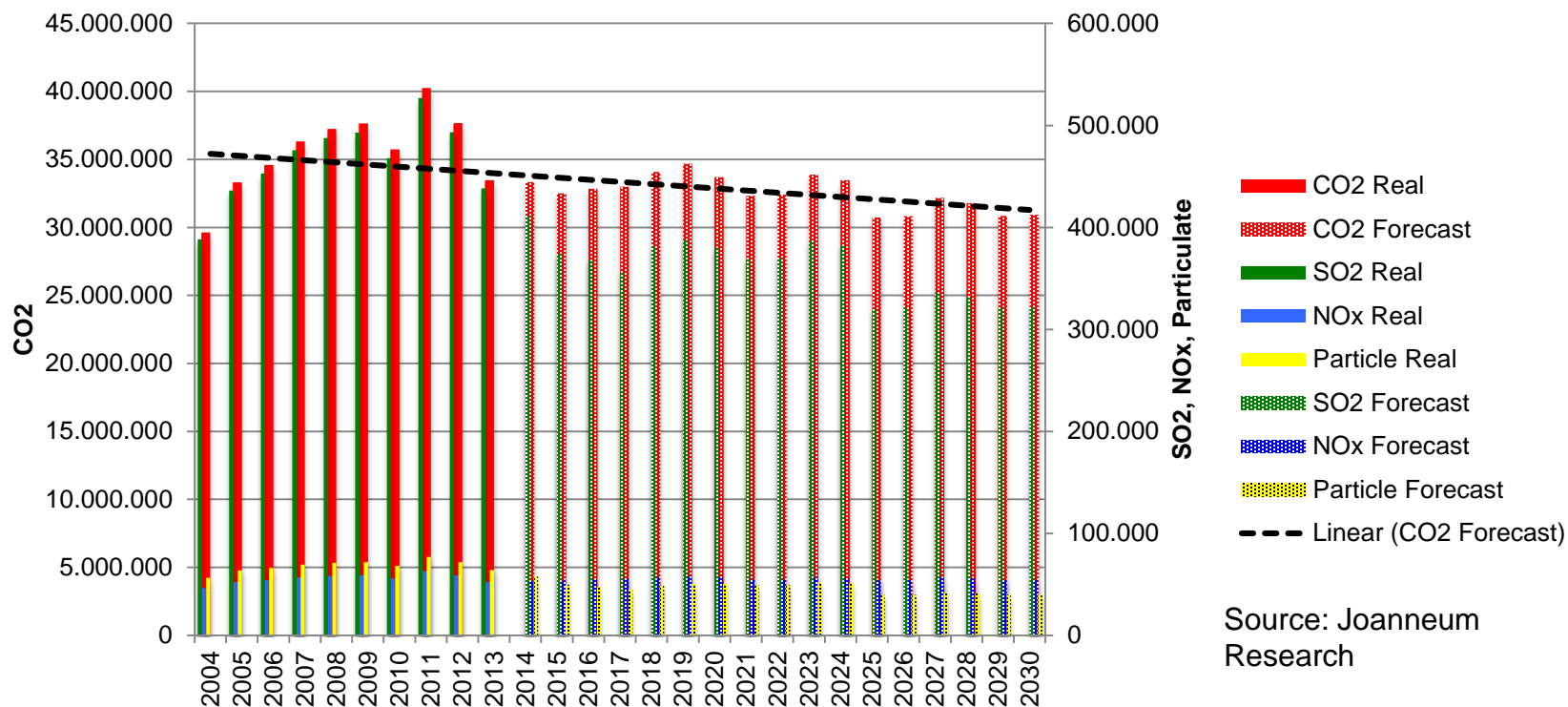
Social aspects (green jobs)



Serbia- Environmental impacts

3

Emissions 2006 - 2030 from electricity production in TPP



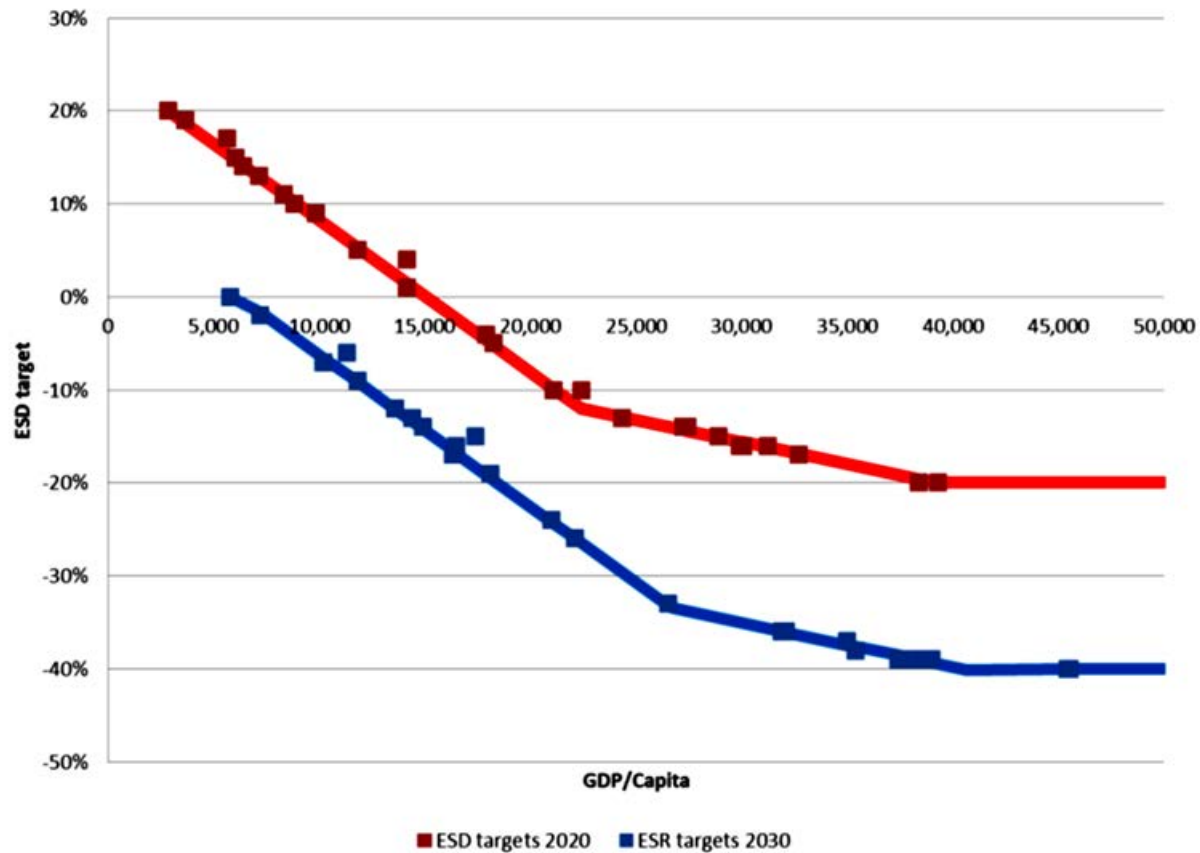
Source: Joanneum Research

EU target setting

- Separate target setting for ETS, non ETS sectors
- EU wide target for ETS sectors (industry, energy production)
 - Non applicable for the CPs
- National targets for non-ETS sectors based on **GDP fairness** (including transport, residential, agriculture, waste)



2020/2030 non-ETS target setting

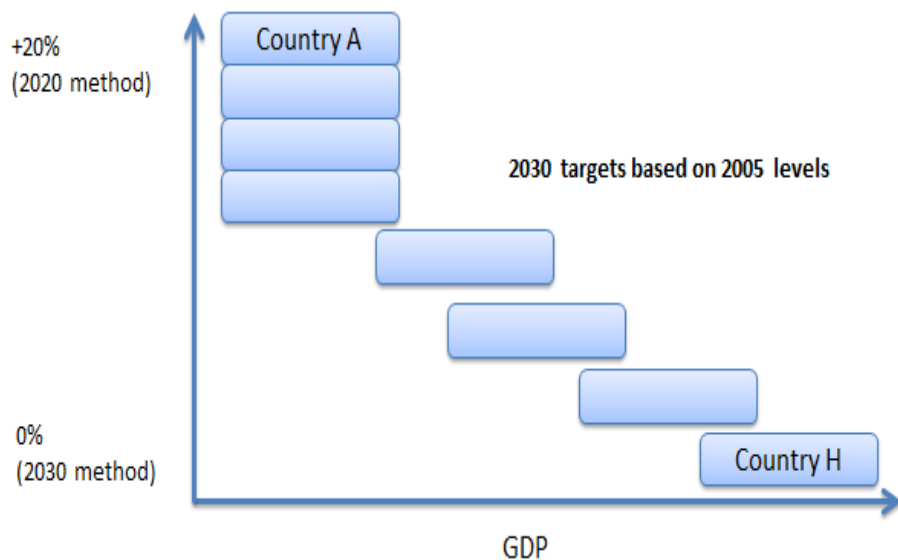


Target setting for the CPs

- Completely analogous method to EU not applicable
 - no ETS in the CPs
 - high ambition level
 - effort sharing of an overall target part of a common economic area
- Current target setting (eg INDCs) often disconnected from the EU approach
- **Which elements of EU target setting can we apply?**



Non-ETS target setting for the CPs

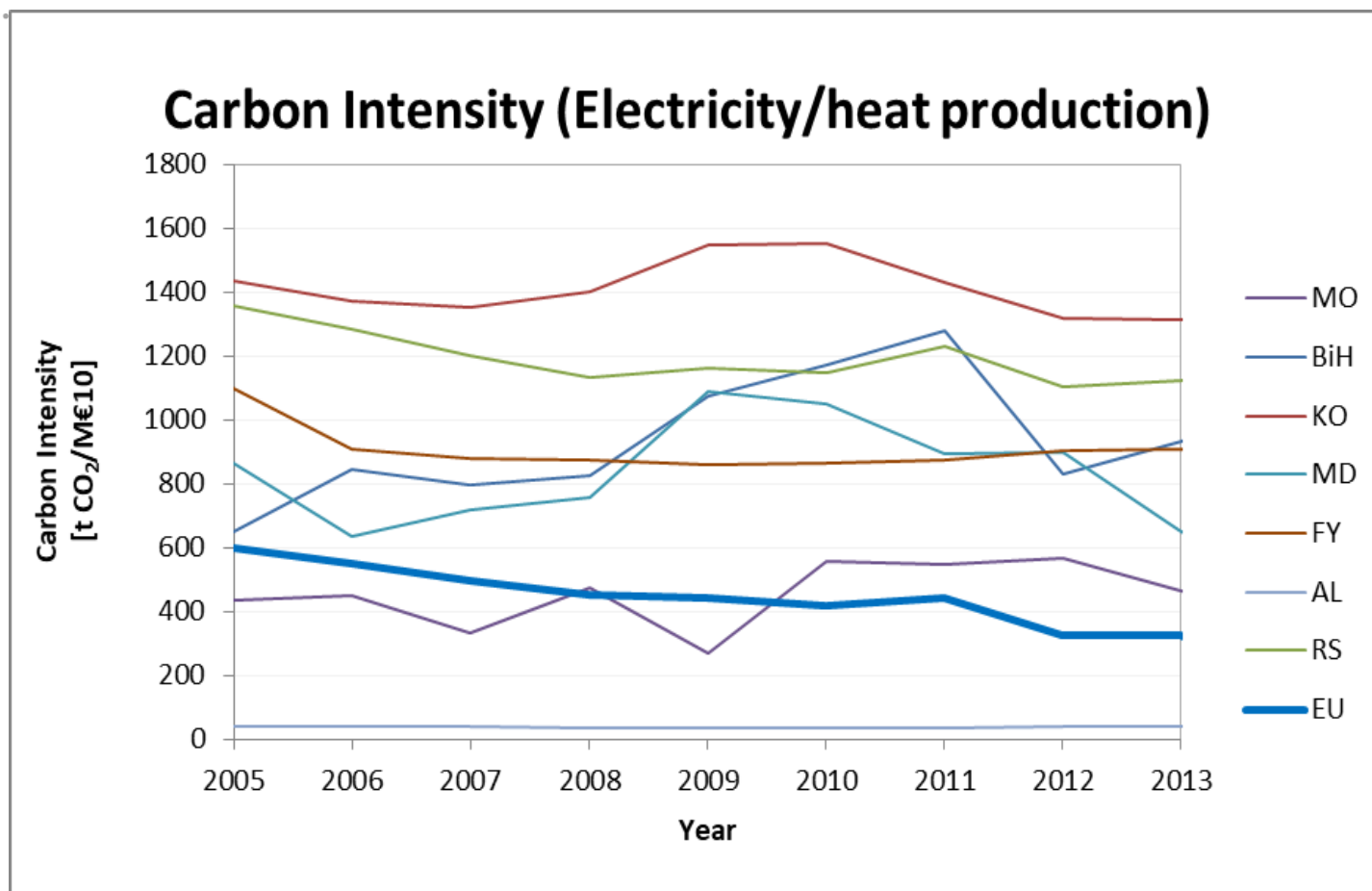


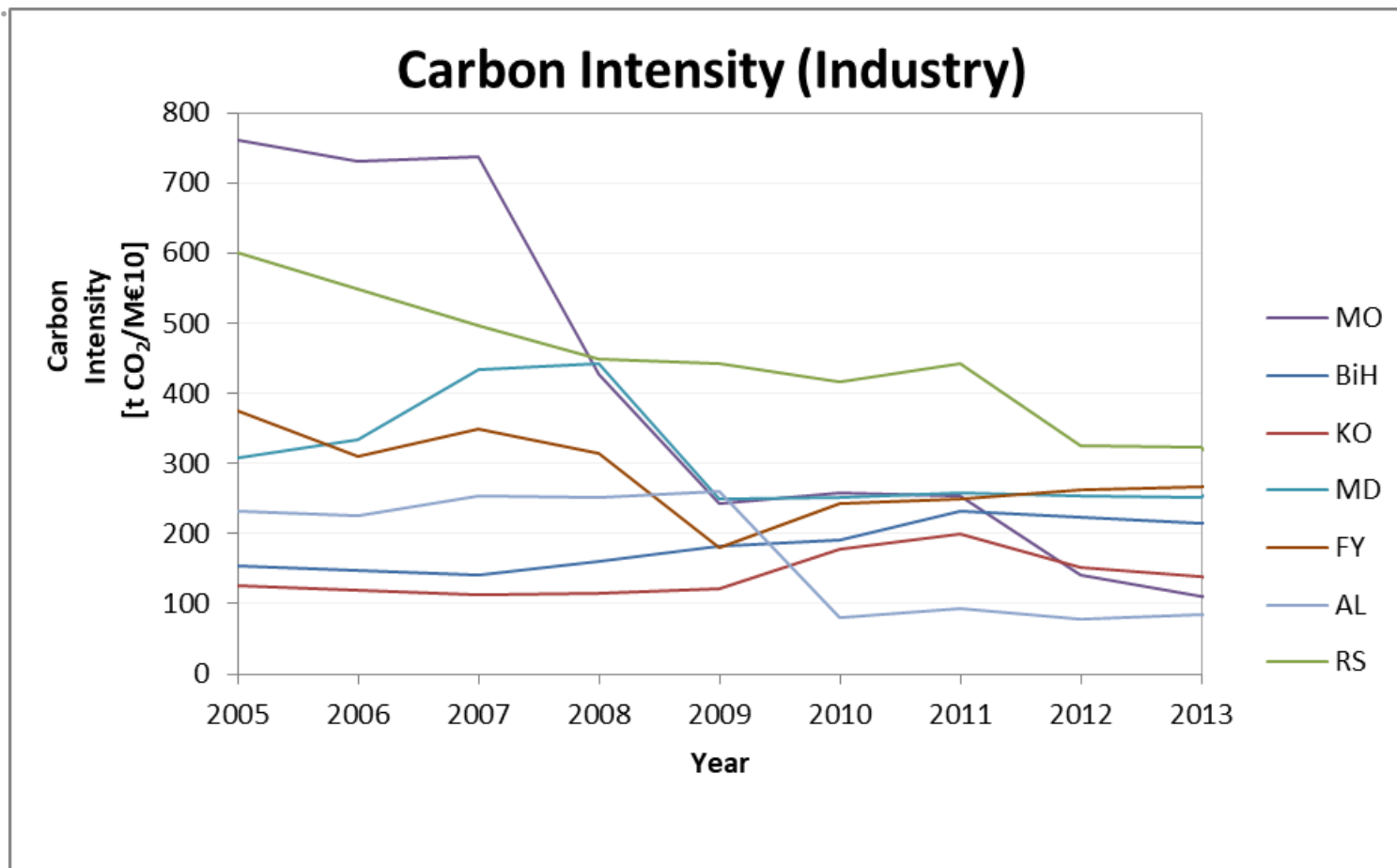
2030 GHG targets		
Emission increases compared to 2005 [%]		
	Targets calculated (2013 GDP)	Targets calculated (2020 GDP)
Montenegro	0.00	0.00
Serbia	7.67	7.47
FYROM	12.98	11.77
BIH	14.50	14.06
Albania	15.78	14.30
Kosovo*	20.00	20.00
Moldova	20.00	20.00
Georgia	20.00	20.00
Ukraine	20.00	20.00

Croatia's EU accession as example?

- Croatia joined the European Union in 2013
 - Non-ETS: Croatia can increase its emissions not covered by the EU ETS by 11% compared to 2005 by 2020.
 - ETS sectors: Community-wide quantity of allowances will be increased by the quantity of allowances that Croatia shall auction
- Croatia's experience:
 - High share of gas in the power mix
 - Low CO₂ prices (3-4 Euro/ton CO₂)





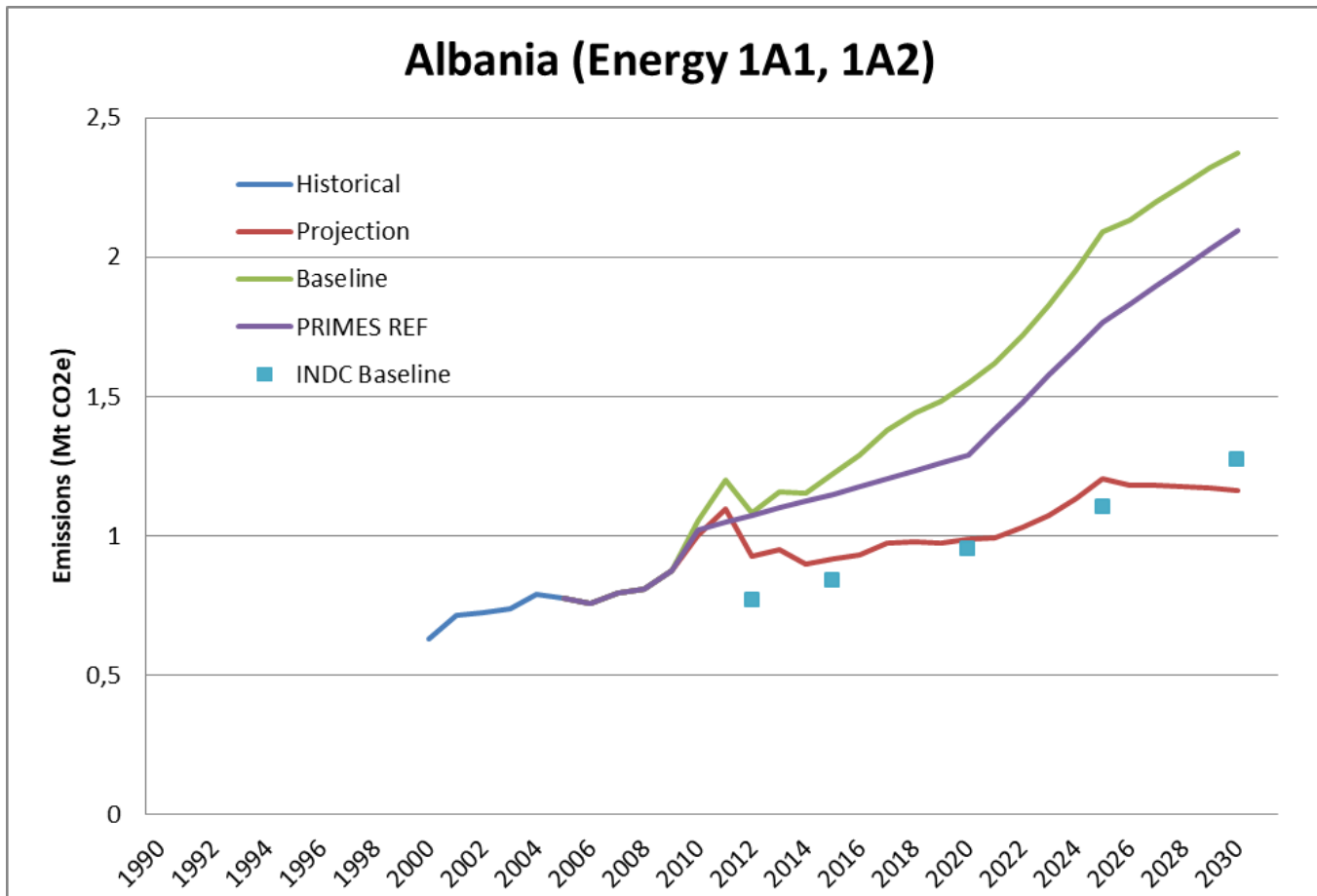


Our approach for the CPs

- Ideally split ETS and non ETS sectors
 - For the non ETS sectors application of our method (GDP related target)
 - For the ETS sectors national projections as basis, but reduction of carbon intensity important feature to make them ETS ready (convergence to ETS benchmarks)

Also: Small countries have little flexibility, as their GHG emissions may strongly depend on a few individual plants

Albania (1)



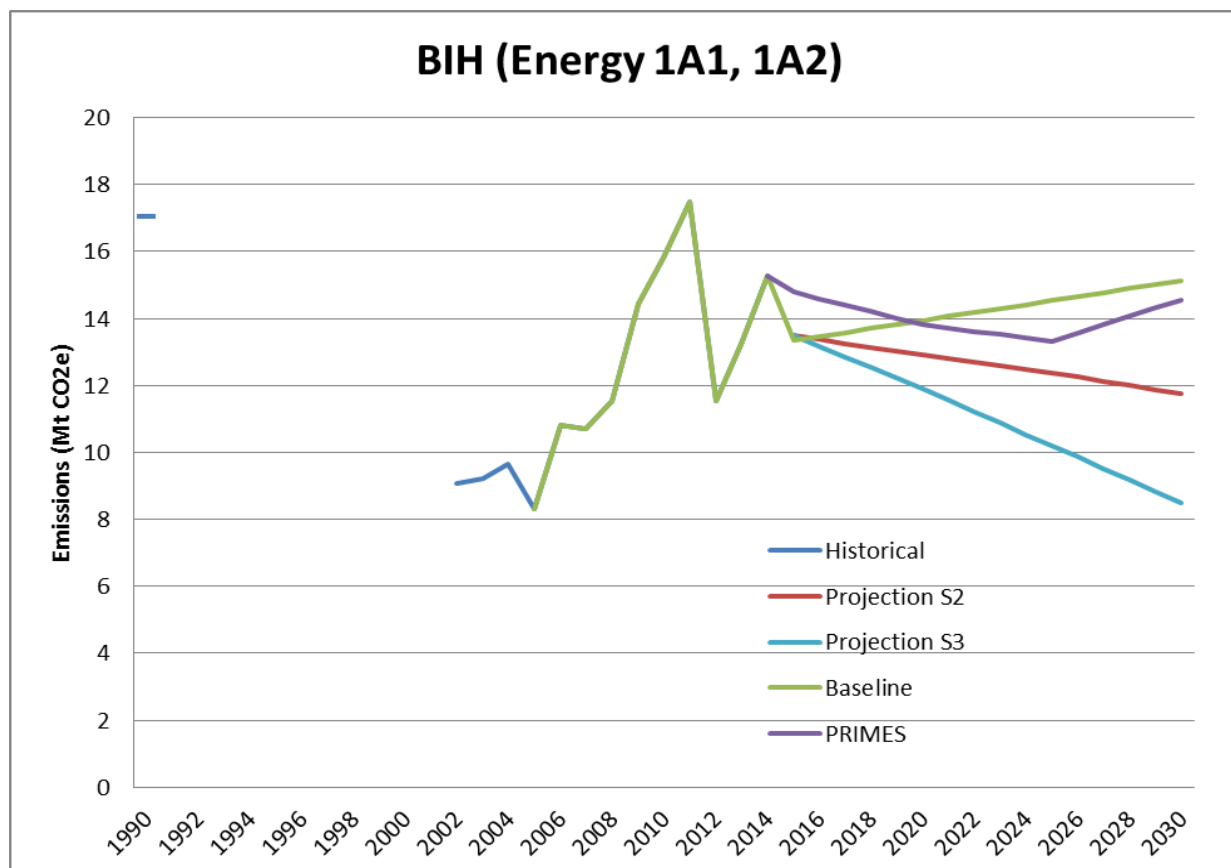
Albania (2)

- Non-ETS target of 6,056 Mt CO₂ by 2030.
- Adding the projected industry/electricity emissions in the INDC background document would result in a target of about 8 Mt in 2030

-> *Assumptions on industrial emission projections unclear*



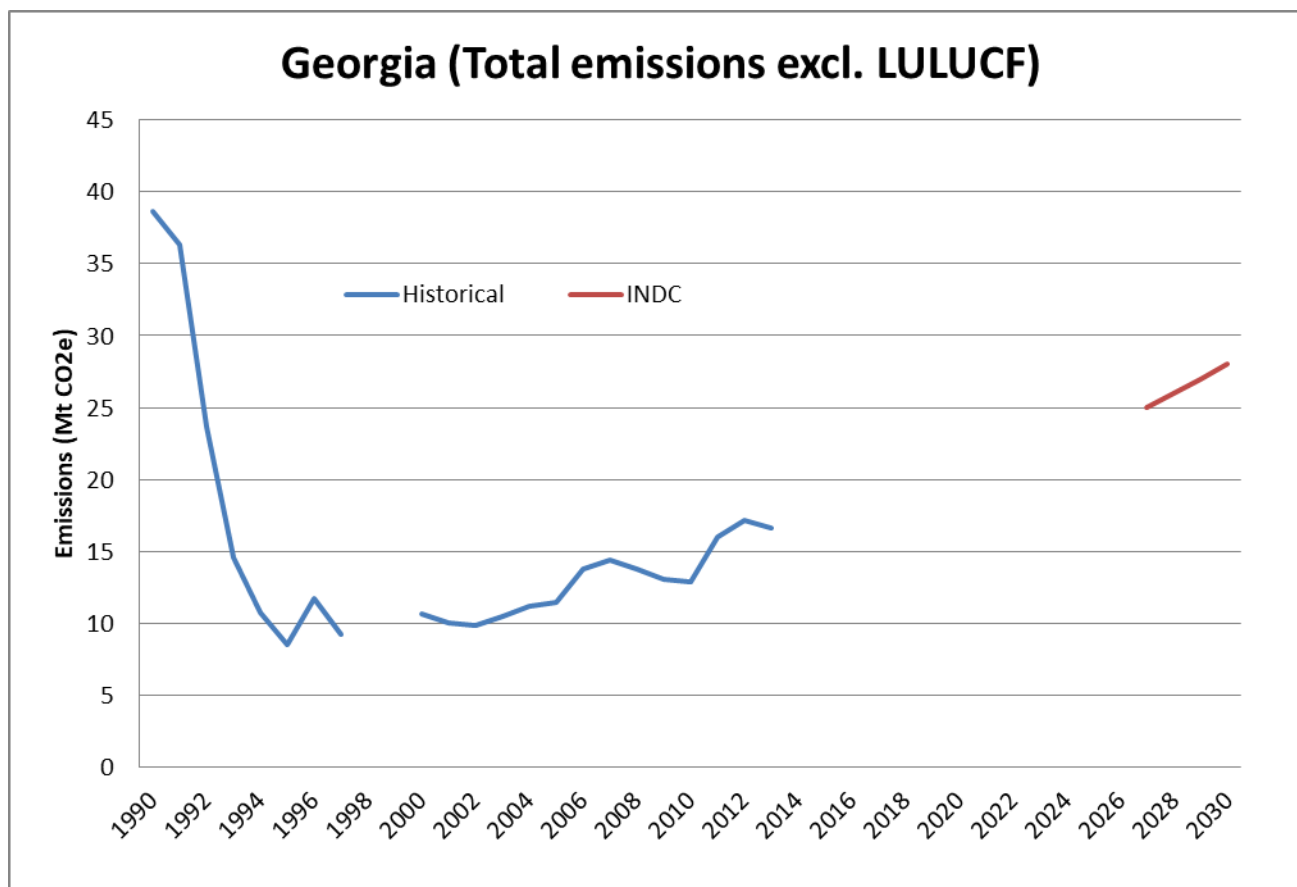
Bosnia and Herzegovonia (1)



Bosnia and Herzegovonia (2)

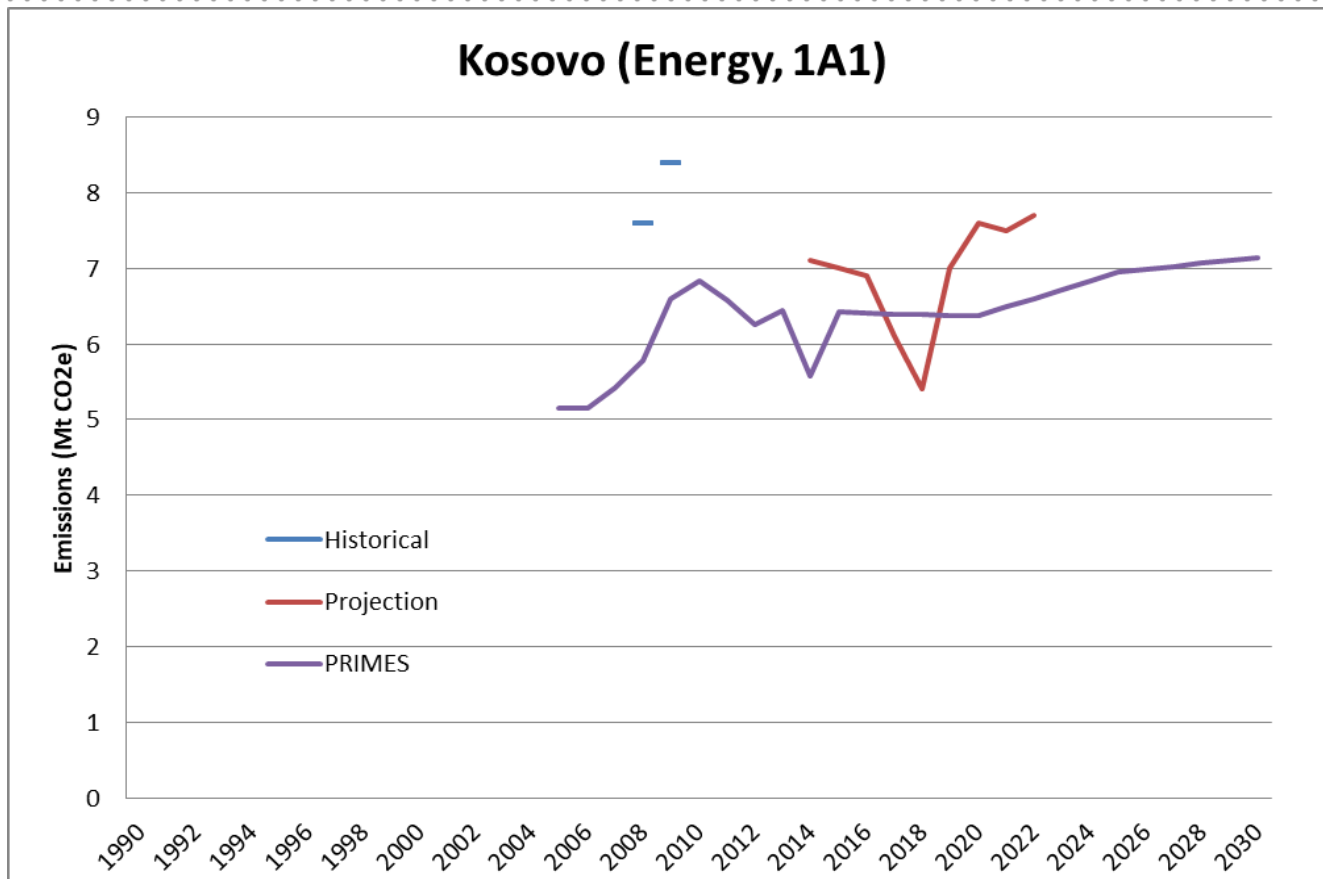
- Non-ETS: about 7.75 Mt GHG emissions in 2030.
 - National emission projection for the energy producing sector is 9.32 Mt of GHG under scenario S2. Industry sector we assume a value of about 3 Mt GHG emissions.
 - Overall, our proposal would lead to a GHG target of 20 Mt by 2030.
- > *No projections for industry available*

Georgia



**INDC as
basis**

Kosovo (1)



Kosovo (2)

- Lack of data!
- There is no (reliable) data for industry or the non-ETS sectors.



Macedonia (1)

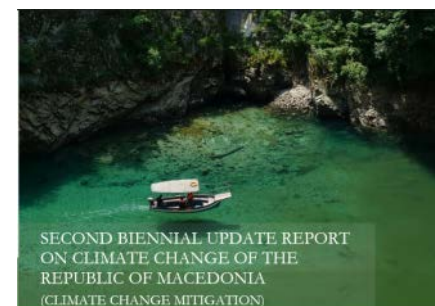
Macedonia (Energy 1A1, 1A2)



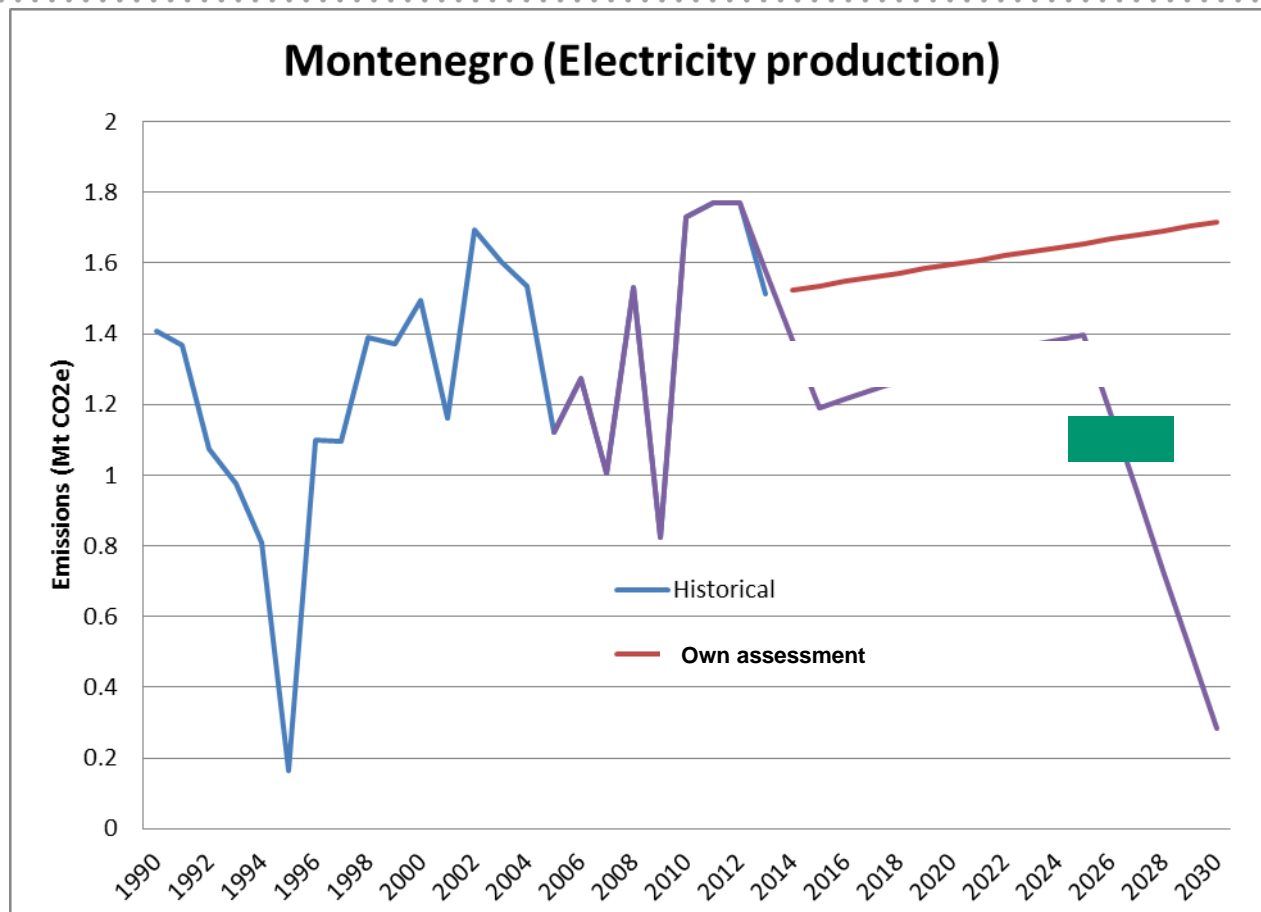
Macedonia (2)

- Emission mitigation scenarios: none of them include new coal. Possible gas plant. Coal phase out by 2030.
- INDC covers only CO₂
- Applying our method would lead to about 14Mt in 2030, higher than the mitigation scenarios in SBUR, far lower than BAU

->We would need a better understanding of industry emission projections



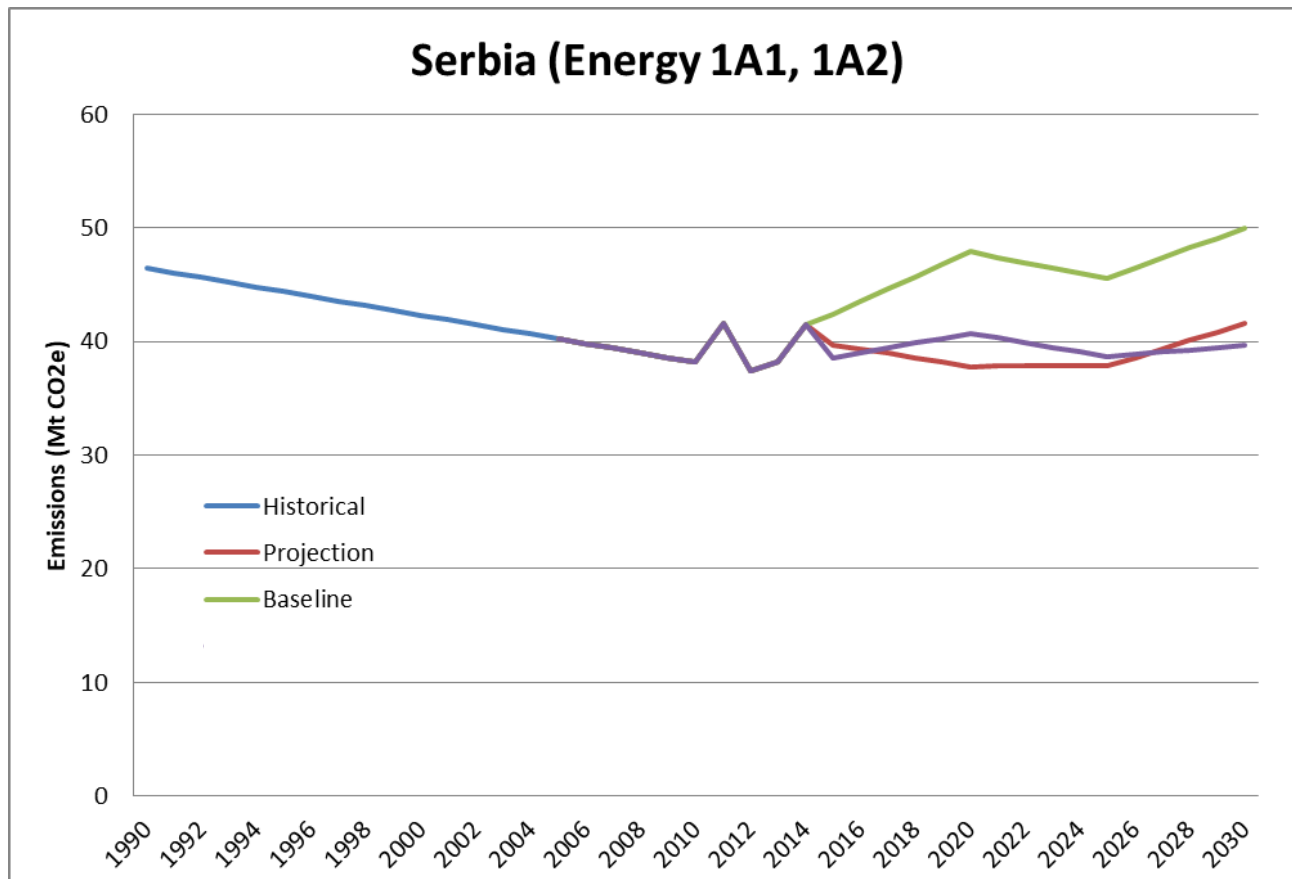
Montenegro (1)



Montenegro (2)

- KAP has reduced its synthetic GHG (PFC) significantly, starting from 2008. Steel Mill Niksic, low emitting technology
- The INDC assumes BAT emissions for the aluminium plant, which would make the country ready for EU-ETS entry, and also assumes that no new coal based generation plant will be built by 2030.
- Non-ETS emissions in 2030: 1,29 Mt CO₂. Adding the emission projections for the ETS sectors we arrive at about 3,7 Mt.

Serbia (1)

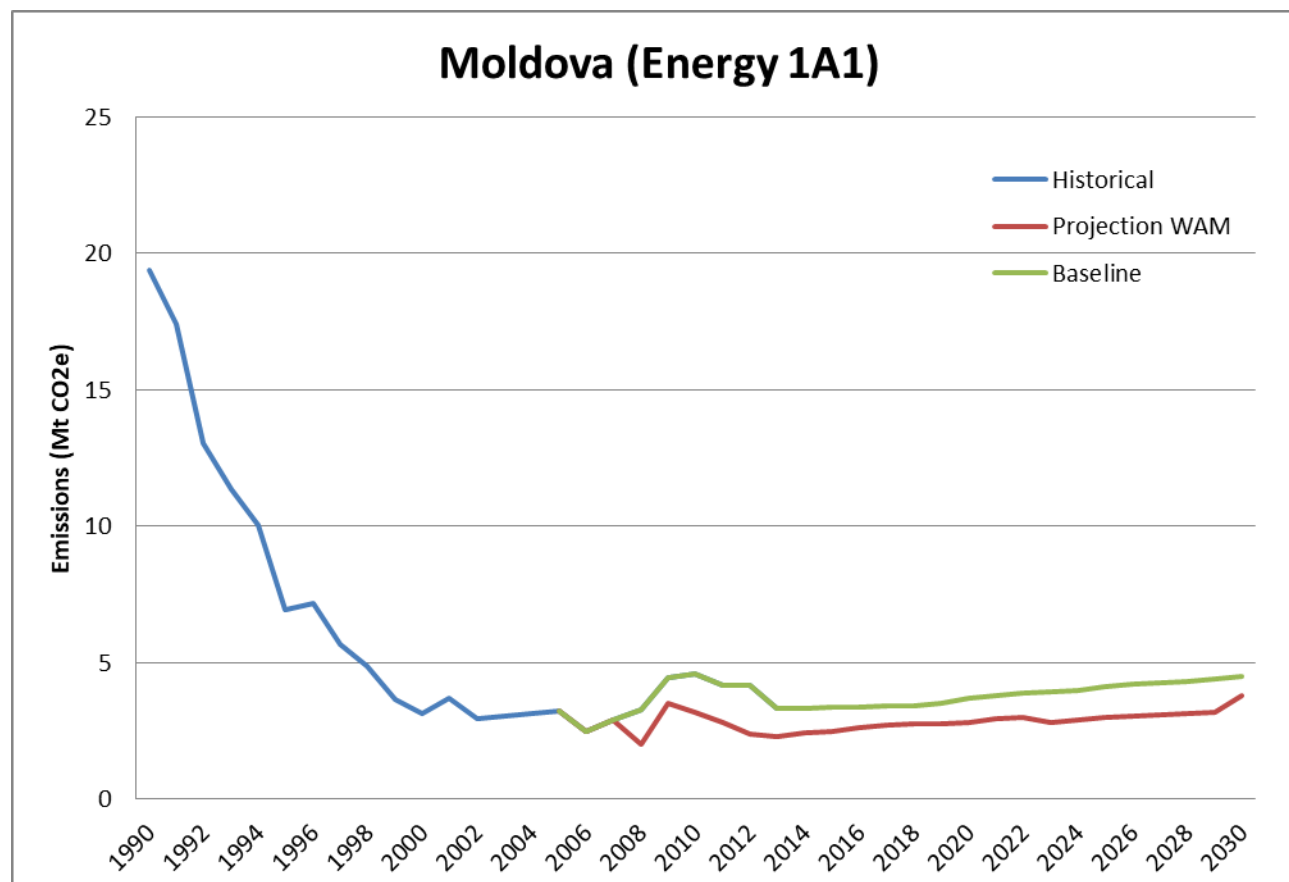


Serbia (2)

- Non-ETS: 22.64 Mt GHG emissions in 2030.
- The 2030 emissions in the WEM scenario for ETS sectors are 47.5 Mt,
- overall of 70 Mt GHG emissions in 2030.



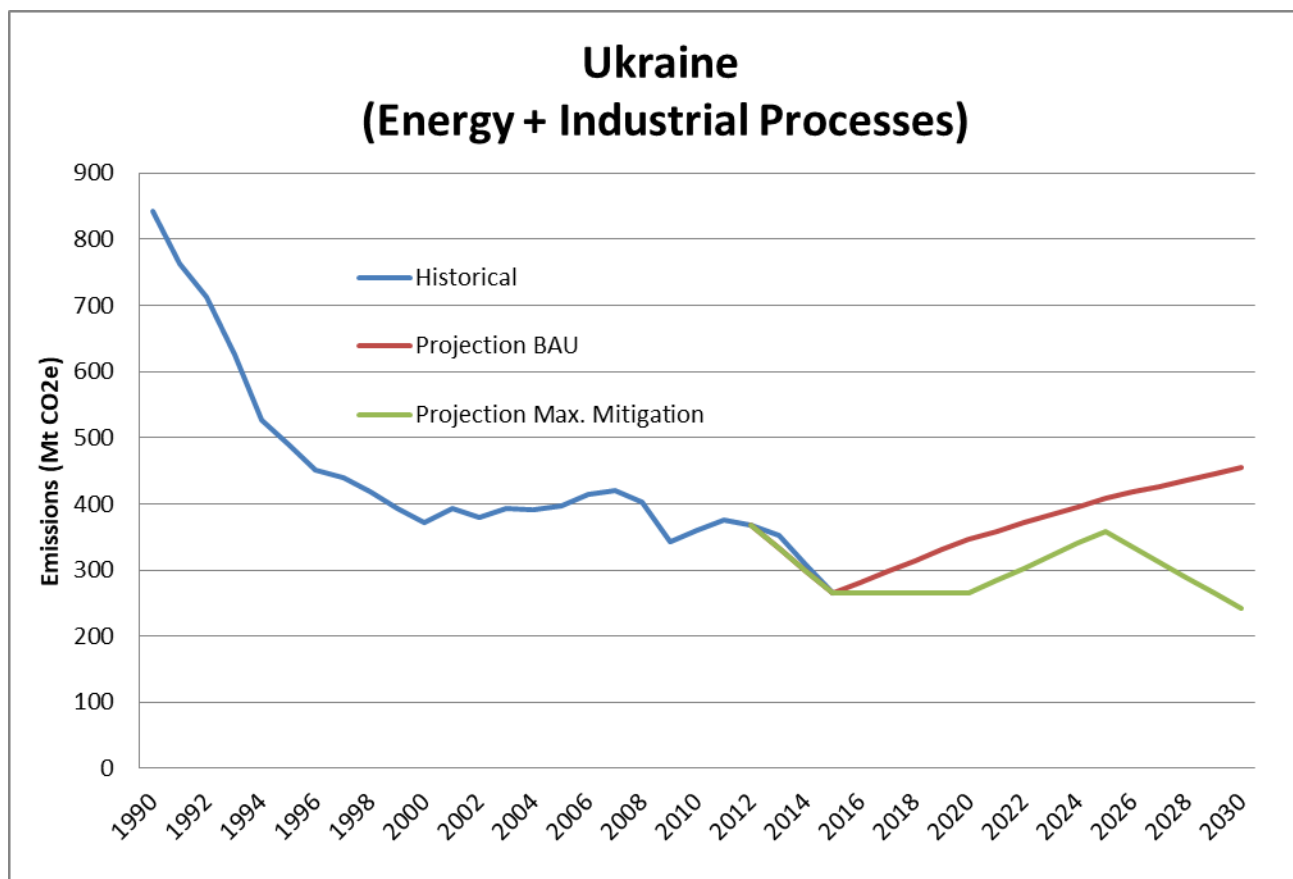
Moldova (1)



Moldova (2)

- In order to have sufficient balancing energy for renewables, approximately 250 MW gas turbines will be put into operation in the next years.
- The WEM scenario results in 16.2 Mt of GHG emissions, while the WAM scenario would result in about 15.2 Mt CO₂e emissions. INDC estimation is in-between these values.
- Our first top-down estimate of the 2030 targets was 15.3 Mt of GHG emissions by 2030.

Ukraine (1)



Ukraine (2)

- In Ukraine the INDC is in the same magnitude of our proposed top-down estimate (20% increase of emission compared to 2005).
- The proposed target will be adjusted based on the proposed 2030 RES and EE targets.

Next steps?

- for most CPs no clear pathways to reduce energy and carbon intensities towards EU benchmarks.
- A first screening of the INDCs and as far as available related background calculations showed limited ambition to increase PV.
 - As NDCs are a few years old
 - Work done by IRENA in 2017 on cost-effective RES potential in SEE could be of valuable help.